Fact Sheet:

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Scaler Corrosion Mitigation and Management System

The Problem

The corrosion status of piping in inaccessible locations, such as internal potable water systems, is difficult to determine. This lack of knowledge about the corrosion status of the piping system severely inhibits the ability of the Directorate of Public Works (DPW) to make cost-effective maintenance decisions. At present, corrective action is usually taken after a pipe has failed.

The Technology

To assist the DPW in making cost-effective maintenance decisions regarding internal potable water piping systems and condensate return lines, the U.S. Army Construction Engineering Research Laboratories (CERL) is developing the computer-based SCALER Corrosion Mitigation and Management System. SCALER includes a complete inventory of a facility's internal potable water piping system. After the piping system is divided into sections, information, such as installation date, operating temperature and pressure, pipe size and material, and location, is stored for each section. Information on the facility's water chemistry is also stored. The system uses this information along with predictive mathematical models to determine the corrosion status of galvanized steel and copper piping systems and condensate return lines. These models will determine a Corrosion Status Index (CSI) for each section and will calculate an estimated date of failure.

The CSI allows facility managers to directly compare and prioritize pipe sections of various ages under different conditions. DPWs can also use SCALER to perform a life-cycle cost analysis of various maintenance and repair alternatives. SCALER will generate printed reports for inventory, corrosion status prediction, pipe condition ranking, and economic analysis.

Benefits/Savings

Knowing the corrosion status for each section of piping throughout the network will enable the DPW to prioritize piping systems for repair or rehabilitation and make cost-effective decisions regarding pipe system maintenance. SCALER's life-cycle cost analysis module allows the user to evaluate several maintenance alternatives for a particular section and choose the most economical one.

Status

SCALER has been field-tested at Fort Lewis, WA, and Fort Stewart, GA. A field implementable version of SCALER is under development with an expected completion date of fiscal year 1997.

Points of Contact

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